

TEXAS BOARD OF NURSING
3.8.6.a. EDUCATION GUIDELINE
Simulation in Pre-licensure Nursing Education
(Position Statement 15.26)

Effective: July 2010

Introduction

Simulation, in some form, has been used as a teaching strategy in nursing education since the first nurse tried to teach the first nursing student how to task properly (Jeffries et al., 2007). Recently, however, high-fidelity simulation, with the increased level of sophistication and realism it brings to the laboratory setting, has elicited the possibility of simulation being used as a substitute for actual clinical experience (NCSBN, 2009). These technological advances combined with other factors, including shortages of available clinical sites, faculty shortages, national mandates for safety, and the complexity of today's health care environment, have led many Texas nursing programs to consider utilizing simulation to fulfill clinical needs in the curriculum. The Texas Board of Nursing ("Board" or "BON") has put forth this position statement in an effort to clarify the role and limitations of simulation in pre-licensure nursing education so that educators can best develop simulation programs that are educationally sound and meaningful.

Overview of Simulation

The National Council of State Boards of Nursing (NCSBN) Position Paper, Clinical Instruction in Pre-licensure Nursing Programs (2005), has defined simulation as "Activities that mimic the reality of a clinical environment and are designed to demonstrate procedures, decision-making and critical thinking through techniques such as, role-playing and the use of devices such as interactive videos or mannequins. A simulation may be very detailed and closely imitate reality, or it can be a grouping of components that are combined to provide some semblance of reality."

Benefits and limitations of Simulation

The benefits of simulation are well documented:

- Simulation allows deliberate practice in a controlled, safe environment. Students are able to practice a procedure prior to performance on a live patient (Jeffries, 2007).
- Simulation promotes active learning and participation, to enhance students' critical thinking skills (Billings & Halstead, 2005).
- Educators can apply well-founded simulation approaches not only to help students in clinical rotations to attain educational goals, but also to evaluate teaching methods, as well as to investigate alternatives to the goals and methods themselves (Kyle & Murray, 2008).

Types of Simulation

When discussing simulation, it is important to understand the concept of fidelity. Fidelity is the term utilized in the simulation domain to describe the degree of accuracy of the system being used. The purpose of simulation is to be realistic in a manner adequate to convince the user that the scenario performed resembles real-life. Fidelity can be divided into three categories: low, moderate, and high-fidelity. Low-fidelity allows the user to practice skills in isolation. Examples include administration of an intramuscular injection into an orange or injection pillow. Moderate-fidelity offers more realism, but does not have the user completely immersed in the situation. Examples include a manikin with breath sounds but no corresponding chest rise. High-fidelity simulation refers to structured learning experiences with computerized manikins that are anatomically precise and reproduce physiologic responses. The environment mimics the clinical setting, and provides the user with the cues necessary to suspend their disbelief during the immersive, hands-on scenarios (NCSBN, 2009). High fidelity units must not only have the physical appearance of reality (cosmetic fidelity) but must also react in realistic ways to student

interactions (Seropian, et al., 2004).

Computer based simulation involves the use of software developed to simulate a subject or a situation in order to test various aspects of learning such as knowledge, skills, and critical thinking. The software may be of low, moderate, or high-fidelity. Task and skill trainers are the most common type of simulation in nursing education. These trainers are designed to allow students to practice skills and techniques. Task trainers also vary in fidelity, ranging from low- fidelity static body models (such as a rubbery IV arm) to high-fidelity virtual reality trainers. Full scale high-fidelity simulation, the most recognized form of simulation in nursing education today, attempts to recreate all the elements of real life clinical situations. This type of simulation typically involves the use of full body computerized manikins, real people, real interactions, and realistic responses in an environment that is made to resemble the clinical environment as closely as possible in order to immerse learners in an experience that mirrors real life (Seropian, et al., 2004).

Components of Effective Simulation

Integral components of a successful simulated learning experience identified in the professional literature include: the educator or preceptor, the student(s), key educational practices, and the simulated environment. The simulation must challenge the student to use problem solving skills and critical thinking to assess the situation and determine the correct treatment path. The educator should act as a facilitator providing cues when necessary, but not as an active participant in the simulation. It is important, however, for the facilitator to intervene when a catastrophic outcome is imminent. Unless the objectives specifically call for death, as in an end of life situation, the scenario should end with a viable patient (Jeffries, 2007; Kyle & Murray 2008). Each simulated experience must have clearly stated objectives that are presented to the student prior to engaging in the simulation experience. Students are required to prepare for a clinical simulation experience in the same manner as they would prepare for an actual patient care experience. An orientation to both the simulation technology and the environment is required. The educator assumes the role of facilitator, providing cues when necessary, but is not an active participant in the simulation. The educator and the student should participate in an active debriefing immediately following the simulation experience. Each simulation session should also include an evaluation of the overall experience by both the educator and student (Jeffries, 2007).

The Texas Board of Nursing's Position on Simulation

The fact that simulation provides a valuable adjunct to traditional clinical learning experiences is well documented. However, while emerging research clearly supports the use of simulation in nursing education, the evidence has not been established to support the use of simulation as a direct substitute for clinical learning experiences with real patients. Nor has evidence been established for parameters regarding the amount of time that can be or should be spent in simulated experiences. Therefore, the Texas Board of Nursing has not promulgated percentages or ratios of simulation versus actual clinical learning education. Nursing education should be based on sound educational principles, and accordingly there should be a reasonable balance between simulation and direct patient care and with rationale, which are clearly appropriate for the study of vocational/professional nursing.

The BON believes that simulation can be an effective teaching method to prepare students for clinical practice when used in combination with traditional skills lab practice and direct patient care experiences. However, simulation cannot replace experiences with real patients, role models, and mentors in the traditional clinical setting (Knight, 1998). In order to satisfy the Board rule requirements for clinical learning experiences promulgated in Chapters 214: Vocational Nursing Education and 215: Professional Nursing Education, and to appropriately incorporate simulation into nursing curricula, educators must be cognizant of the following criteria:

- Nursing education programs shall include clinical education experiences with actual patients that are sufficient to meet program outcomes as well as rule requirements found in Chapters 214 and 215.
- Nursing education programs shall include clinical learning experiences with actual patients that are across the life span.

- Clinical education experiences (including simulated experiences) should be supervised by qualified faculty as defined in Chapters 214 and 215.
- Faculty members retain the responsibility to demonstrate that programs have clinical experiences with actual patients that are sufficient to meet program outcomes.
- Additional research needs to be conducted on the use of simulation in prelicensure nursing education and clinical competency.

The BON recommends that nursing programs adhere to the guidelines put forth in this position statement to ensure that students receive optimal learning experiences.

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